FUTUREPROOF INNOVATIVE ANTENNAS

INDUSTRY GUIDE 2023

Mining & Tunnelling

A summarised technical overview for various antennas in our Mining & Tunnelling range

POYNTING

COMPANY OVERVIEW

POYNTING

THE COMPANY

Poynting Antennas designs, manufactures and sells cellular antenna products and related equipment mainly to the telecommunications, broadcasting and related industries.

Established in 1990, Poynting has grown to become one of the leading antenna manufacturers in South Africa.

Poynting exists for advancing antenna applications: its name is derived from the Poynting vector, a directional measure of energy in an electromagnetic field.

Poynting was founded on the deep knowledge and understanding of the principles of electromagnetics, RF propagation, antenna design and development.

Poynting employees include graduate as well as professionally registered engineers with PhD doctorate level expert knowledge of the technology and the industry. Poynting has a legacy of innovative design and delivery with customers and partners worldwide.

FOOTPRINT

Apart from South Africa, roughly 80% of total sales are International with the main markets being Europe, USA, Canada and Australia. International sales are fulfilled through long-standing distribution partners.

COMMITMENT TO QUALITY

Poynting Antennas (Pty) Ltd is dedicated to ensure that its products and services fully meet the requirements of its customers at all times.

Poynting has a legacy of innovation, design and fulfilment, taking pride in its solid ethical approach. Innovation and creative independence, team spirit and continual learning ensures the organisation can respond to challenges with agility.

INNOVATION

Poynting holds extensive Intellectual Property (IP) with over 50 registered designs, patents and trademarks filed to differentiate our products from competitive offerings.
Poynting R&D is constantly on the edge of novel innovation.

OPERATIONS

With production facilities in Samrand, South Africa (for specialised and unique products), Poynting has established satellite manufacturing facilities in Shenzhen China (90% of all antenna productions) with strict quality and manufacturing metrics to ensure the integrity of product performance. International logistics and high volume supply are further streamlined from Shenzhen, China.

INTERNATIONAL SALES AND BUSINESS DEVELOPMENT

Poynting has embarked on a long term strategy to expand its reach into the international arena. Poynting opened its office with full representation in Germany focusing on deepening the approach in Europe, Scandinavia and Eastern Europe.

In April 2021 we opened offices and a warehouse in the USA and with this expansion Poynting will be able to accelerate our growth and take on the huge demand for broadband antennas in the region.

Poynting is continuously improving – a careful and selective approach for growth in new markets and regions. We seek to promote our products and solutions worldwide and therefore seek distributors in regions where our market share is still small. Servicing new customers better, expanding the business in “undiscovered” regions with new and exciting products.

POYNTING - BEYOND A CONNECTED LIFE

MINING & TUNNELLING

POYNTING

Underground communication systems perform a vital role in the safety & productivity of mining and tunnelling operations. Modern underground operations use communication systems to enable secure voice communications, locate both people and machinery, remote control of vehicles and systems, as well as site access and security.

A crucial component of the underground communication system is the antenna; a specialized antenna can enhance wireless connectivity significantly.

Poynting Antennas has a long history of designing and supplying specialist antennas for mining and tunnel communication systems in various mines and tunnels.

We manufacture a complete Wi-Fi and LTE range of antennas that are used in mines internationally. Especially our circular polarised helical antenna range.

CONTENTS PAGE

Alphabetically & Numerically listed

HELI-3

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	17.5dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO
Size (LxWxD):	1040mm x 145mm x 120mm

HELI-3-IS

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	17.5dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO
Size (LxWxD):	1040mm x 145mm x 120mm

Intrinsically Safe - The antenna is constructed with a special coating to prevent sparks of any kind, that could result in causing a fire.

HELI-4

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	14.5dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO
Size (LxWxD):	420mm x 145mm x 120mm

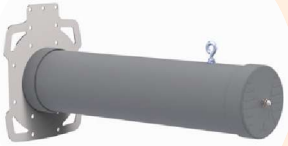
HELI-4-IS

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	14.5dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO
Size (LxWxD):	420mm x 145mm x 120mm

Intrinsically Safe - The antenna is constructed with a special coating to prevent sparks of any kind, that could result in causing a fire.

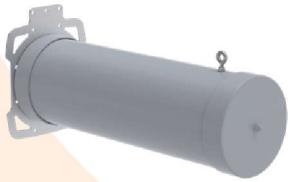
HELI-5



Primary Industry: Mining & Tunnelling

Frequency:	1710-2170 MHz
Max Gain:	16dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO
Size (LxWxD):	514mm x 245mm x 197mm

HELI-6

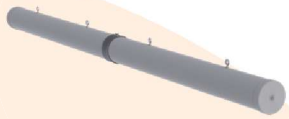


Primary Industry: Mining & Tunnelling

Frequency:	698-960 MHz
Max Gain:	13.5dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO
Size (LxWxD):	750mm x 250mm x 210mm

POYNTING

HELI-8



Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	14.5dBi
Radiation Pattern:	Bi-Directional
MIMO:	SISO
Size (LxWxD):	2004mm x 142mm x 116mm

HELI-8-IS

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	14.5dBi
Radiation Pattern:	Bi-Directional
MIMO:	SISO
Size (LxWxD):	2004mm x 142mm x 116mm

Intrinsically Safe - The antenna is constructed with a special coating to prevent sparks of any kind, that could result in causing a fire.

HELI-11

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	12dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO or 2X2 MIMO (possible with RHC & LHC combined)
Size (LxWxD):	325mm x 145mm x 115mm

HELI-12

Primary Industry: Mining & Tunnelling

Frequency:	5000-6000 MHz
Max Gain:	13dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO or 2X2 MIMO (possible with RHC & LHC combined)
Size (LxWxD):	321mm x 142mm x 114mm

HELI-13

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	13dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO or 2X2 MIMO (possible with RHC & LHC combined)
Size (LxWxD):	321mm x 142mm x 114mm

HELI-17

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500 MHz
Max Gain:	9dBi
Radiation Pattern:	Bi-Directional
MIMO:	SISO or 2X2 MIMO (possible with RHC & LHC combined)
Size (LxWxD):	632mm x 142mm x 114mm

HELI-18

Primary Industry: Mining & Tunnelling

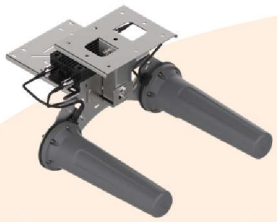
Frequency:	5000-6000 MHz
Max Gain:	11dBi
Radiation Pattern:	Bi-Directional
MIMO:	SISO or 2X2 MIMO (possible with RHC & LHC combined)
Size (LxWxD):	632mm x 142mm x 114mm

HELI-19

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	11dBi
Radiation Pattern:	Bi-Directional
MIMO:	SISO or 2X2 MIMO (possible with RHC & LHC combined)
Size (LxWxD):	626mm x 143mm x 114mm

HELI-21



Primary Industry: Mining & Tunnelling

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	13dBi
Radiation Pattern:	Uni-Directional
MIMO:	2X2 MIMO
Size (LxWxD):	526mm x 415mm x 266mm

HELI-22

Primary Industry: Mining & Tunnelling

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	11dBi
Radiation Pattern:	Bi-Directional
MIMO:	2X2 MIMO
Size (LxWxD):	603mm x 415mm x 266mm

HELI-31

Primary Industry: Mining & Tunnelling

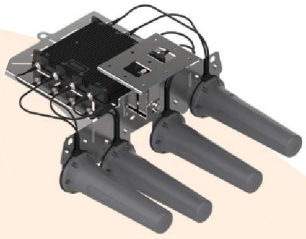
Frequency:	1700-7200 MHz
Max Gain:	9.5dBi
Radiation Pattern:	Uni-Directional
MIMO:	SISO, 2X2 (possible with RHC & LHC combined)
Size (LxWxD):	411mm x 142mm x 114mm

HELI-40

Primary Industry: Mining & Tunnelling

Frequency:	2400 - 2500; 5000 - 6000 MHz
Max Gain:	4dBi
Radiation Pattern:	Uni-Directional
MIMO:	4X4 MIMO
Size (LxWxD):	mm x mm x mm

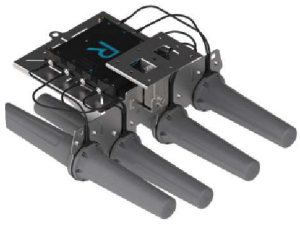
HELI-41



Primary Industry: Mining & Tunnelling

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	2.4GHz: 12.5dBi & 5GHz: 13dBi
Radiation Pattern:	Uni-Directional
MIMO:	4X4 MIMO
Size (LxWxD):	mm x mm x mm

HELI-42



Primary Industry: Mining & Tunnelling

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	2.4GHz: 9.5dBi & 5GHz: 13dBi
Radiation Pattern:	Bi-Directional
MIMO:	4X4 MIMO
Size (LxWxD):	570mm x 680mm x 289mm

MIMO-3

Available in Black

Primary Industry: Transport & Mobility; Marine & Coastal; Farming & Agricultural
Secondary Industry: Mining & Tunnelling; IoT, M2M & Smart Meters

Frequency:	MIMO-3-12/13; 410-470; 698-960; 1710-2700; 3400-3800 MHz; MIMO-3-14; 5000-6000 MHz
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO; 4X4 MIMO
Size (LxWxD):	253mm x 144mm x 128mm

MIMO-3

Available in Black

Primary Industry: Transport & Mobility; Marine & Coastal; Farming & Agricultural
Secondary Industry: Mining & Tunnelling; IoT, M2M & Smart Meters

Frequency:	MIMO-3-15; 410-470; 698-960; 1710-2700; 3400-3800 MHz; MIMO-3-17; 5000-6000 MHz
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO; 4X4 MIMO
Size (LxWxD):	253mm x 144mm x 128mm

MIMO-4

Available in Black

Primary Industry: Transport & Mobility; Marine & Coastal; Farming & Agricultural
Secondary Industry: Mining & Tunnelling; IoT, M2M & Smart Meters

Frequency:	617 - 7200 MHz, 617 to 6000 MHz (cellular)
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO; 4X4 MIMO
Size (LxWxD):	Ø160 mm x 65 mm

OMNI-297

Primary Industry: Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	617-960; 1427-1517; 1710-2700; 3400-3800 MHz (Band 71-US Specific)
Max Gain:	2dBi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	150mm x Ø70mm

OMNI-702

Primary Industry: Commercial & Industrial; Mining & Tunnelling
Secondary Industry: Farming & Agricultural; IoT, M2M & Smart Meters

Frequency:	2400-2500MHz
Max Gain:	9dBi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	307mm x Ø70mm

OMNI-703

Primary Industry: Commercial & Industrial; Mining & Tunnelling
Secondary Industry: Farming & Agricultural; IoT, M2M & Smart Meters

Frequency:	2400-2500 MHz
Max Gain:	4Bi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	307mm x Ø70mm

OMNI-704

Primary Industry: Commercial & Industrial; Mining & Tunnelling
Secondary Industry: Farming & Agricultural; IoT, M2M & Smart Meters

Frequency:	5000-6000 MHz
Max Gain:	4dBi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	155mm x Ø70mm

OMNI-705

Primary Industry: Commercial & Industrial; Mining & Tunnelling
Secondary Industry: Farming & Agricultural; IoT, M2M & Smart Meters

Frequency:	5000-6000 MHz
Max Gain:	7dBi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	307mm x Ø70mm

OMNI-706

Primary Industry: Commercial & Industrial; Mining & Tunnelling
Secondary Industry: Farming & Agricultural; IoT, M2M & Smart Meters

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	5.5dBi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	155mm x Ø70mm

OMNI-707

Primary Industry: Commercial & Industrial; Urban & Rural; Farming & Agricultural
Secondary Industry: Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	5dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO
Size (LxWxD):	307mm x Ø70mm

PUCK-1

4G LTE 5G M2M IoT

Available in White

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800 MHz
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	Ø99.3mm x 36mm

PUCK-2

4G LTE 5G M2M

Available in White

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800 MHz
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 2-in-1 Antenna: 2 x LTE
Size (LxWxD):	Ø99.3mm x 36mm

PUCK-4

4G LTE 5G M2M IoT GPS

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800 MHz
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 3-in-1 Antenna: 2 x LTE, 1 x GPS
Size (LxWxD):	Ø99.3mm x 36mm

PUCK-5

4G LTE 5G M2M IoT GPS

Available in White

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800; 5000-6000 MHz
Max Gain:	7.5dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 5-in-1 Antenna: 2 x LTE, 2 x Wi-Fi, 1 x GPS
Size (LxWxD):	Ø99.3mm x 36mm

PUCK-7

4G LTE 5G M2M Wi Fi DUALBAND IoT

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800; 5000-6000 MHz
Max Gain:	7.5dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 4-in-1 Antenna: 2 x LTE, 2 x Wi-Fi
Size (LxWxD):	Ø99.3mm x 36mm

PUCK-8

4G LTE 5G M2M Wi Fi DUALBAND IoT

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800; 5000-6000 MHz
Max Gain:	7.5dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 3-in-1 Antenna: 2 x LTE, 1 x Wi-Fi
Size (LxWxD):	Ø99.3mm x 36mm

PUCK-12

Available in White

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	7.5dBi Wi-Fi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 2-in-1 Antenna: 2 x Wi-Fi
Size (LxWxD):	Ø99.3mm x 36mm

SPLT-16

Primary Industry: Mining & Tunnelling, Commercial & Industrial, Farming & Agricultural, Urban & Rural

Frequency:	410-7200 MHz
Isolation:	-10db
Insertion Loss:	-1db
MIMO:	2X2 MIMO
Size (LxWxD):	158mm x 96mm x 40mm (Excluding cables, connectors and adhesive foam)